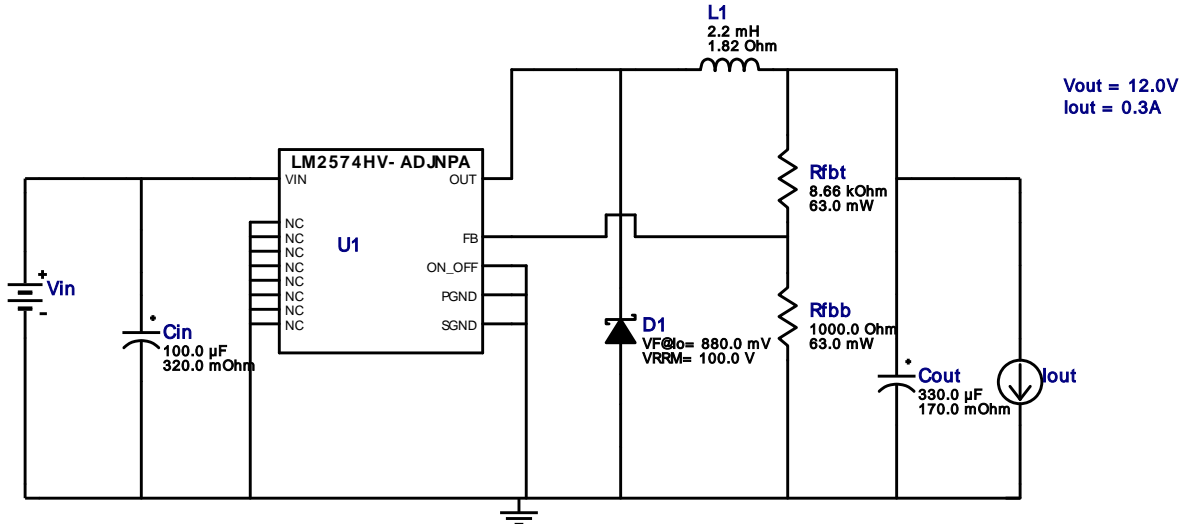
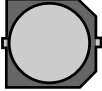




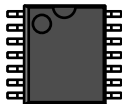
**WEBENCH® Design Report**

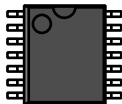
 Design : 433359/257 LM2574HVMX-ADJ/NOPB  
 LM2574HVMX-ADJ/NOPB 47.0V-49.0V to 12.00V @ 0.3A

**My Comments**

No comments

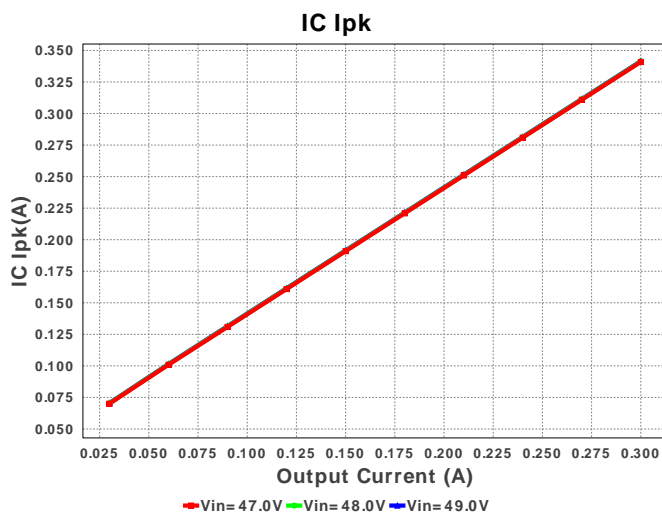
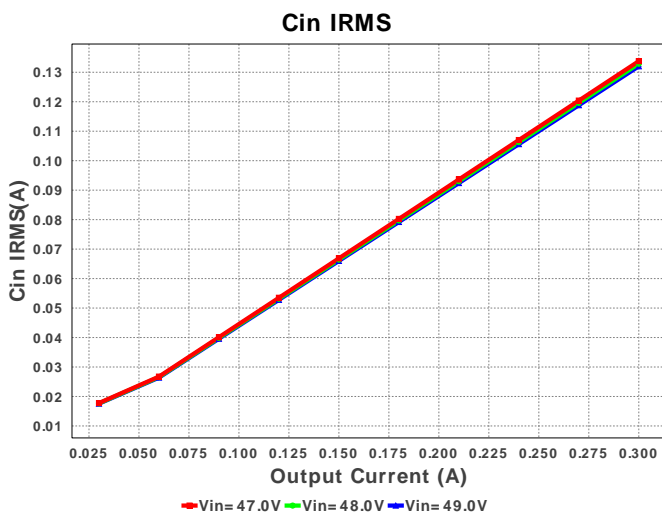
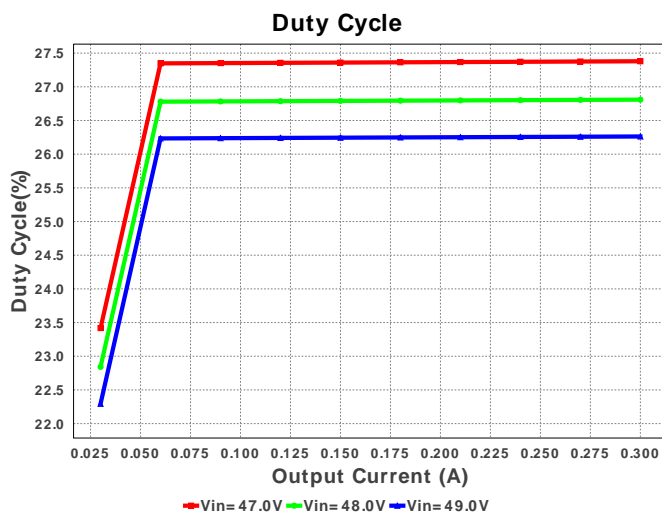
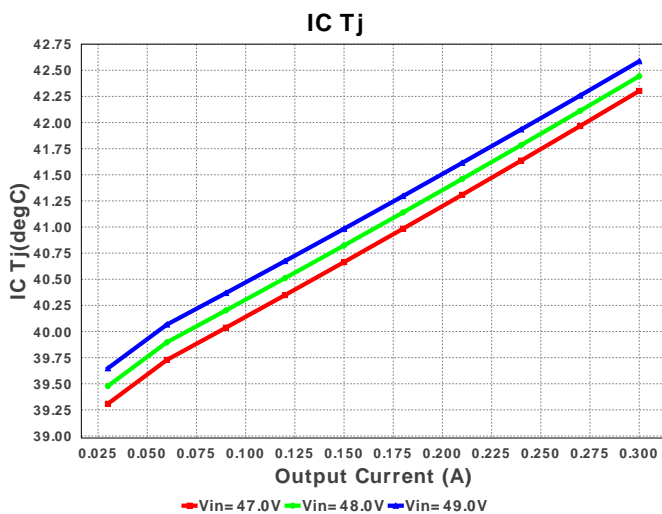
**Electrical BOM**

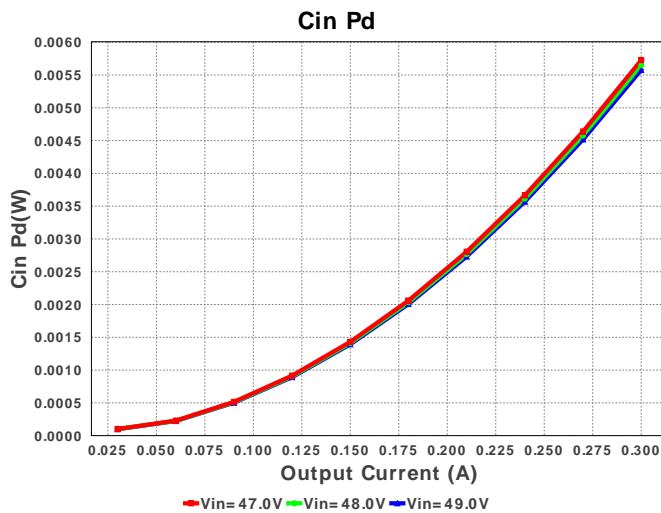
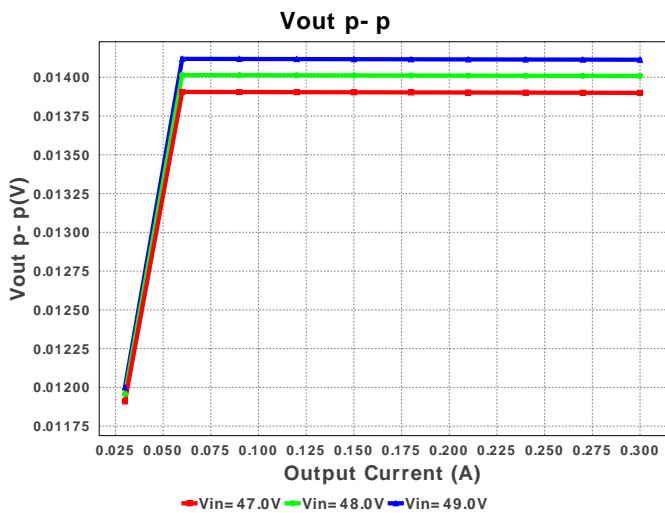
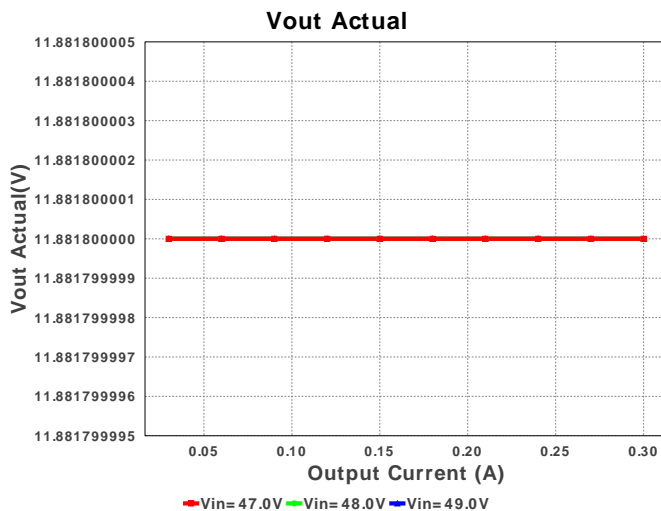
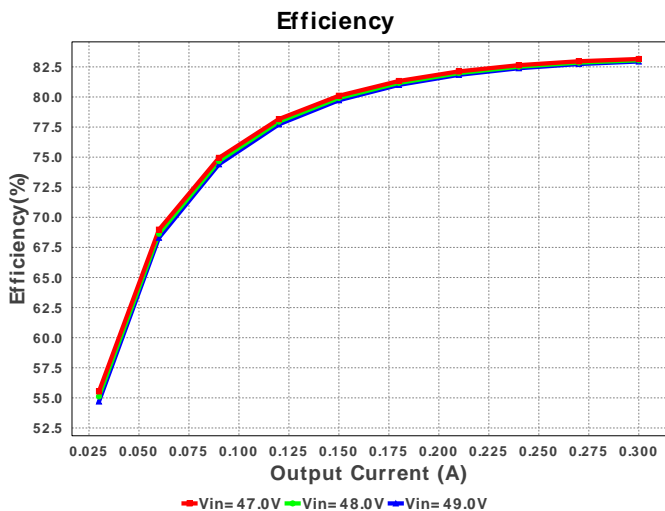
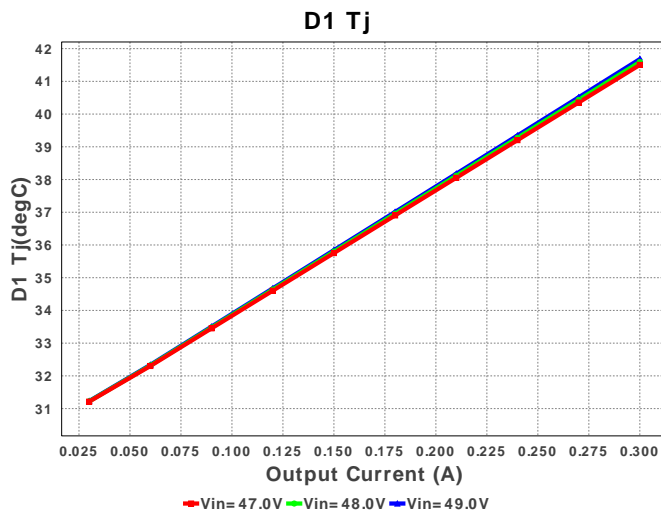
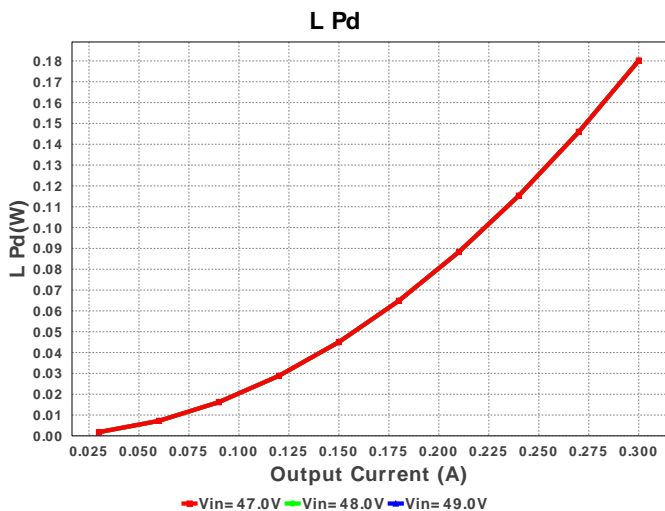
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	Panasonic	EEV-FK1K101Q Series= FK	Cap= 100.0 uF ESR= 320.0 mOhm VDC= 80.0 V IRMS= 500.0 mA	1	\$0.45	 SM_RADIAL_H13 264 mm <sup>2</sup>
2.	Cout	Nichicon	UUD1E331MNL1GS Series= uD	Cap= 330.0 uF ESR= 170.0 mOhm VDC= 25.0 V IRMS= 450.0 mA	1	\$0.20	 SM_RADIAL_8MM 113 mm <sup>2</sup>
3.	D1	Vishay-Semiconductor	SS10PH10-M3/86A	VF@Io= 880.0 mV VRRM= 100.0 V	1	\$0.29	 TO-277A 57 mm <sup>2</sup>
4.	L1	Coilcraft	MSS1210-225KEB	L= 2.2 mH DCR= 1.82 Ohm	1	\$0.81	 MSS1210 204 mm <sup>2</sup>
5.	Rfbb	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm <sup>2</sup>
6.	Rfbt	Vishay-Dale	CRCW04028K66FKED Series= CRCW..e3	Res= 8.66 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm <sup>2</sup>

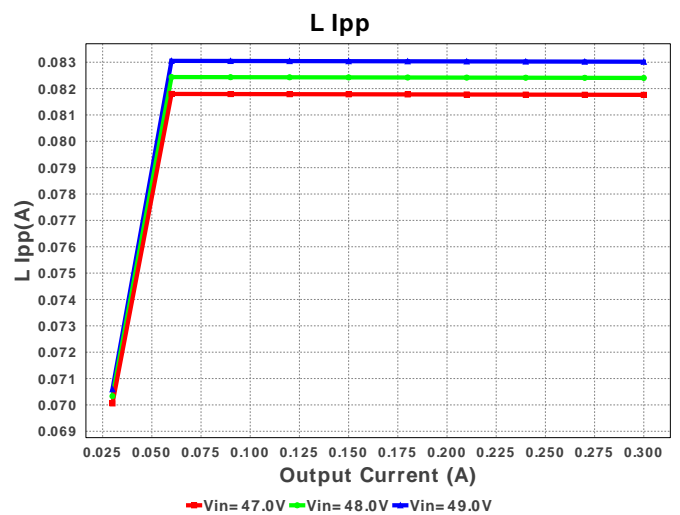
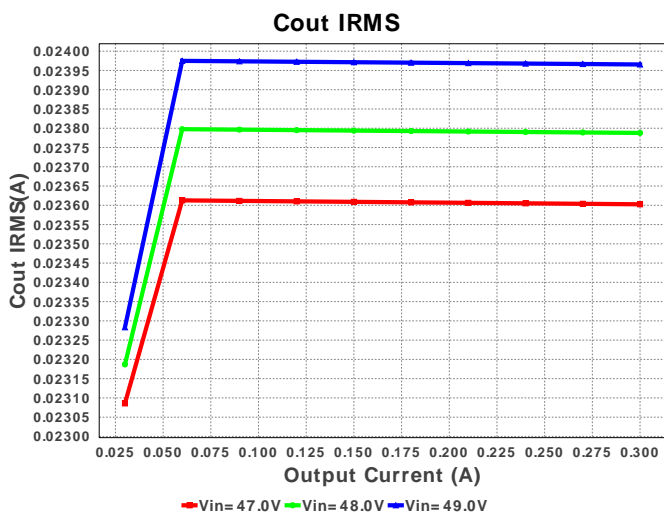
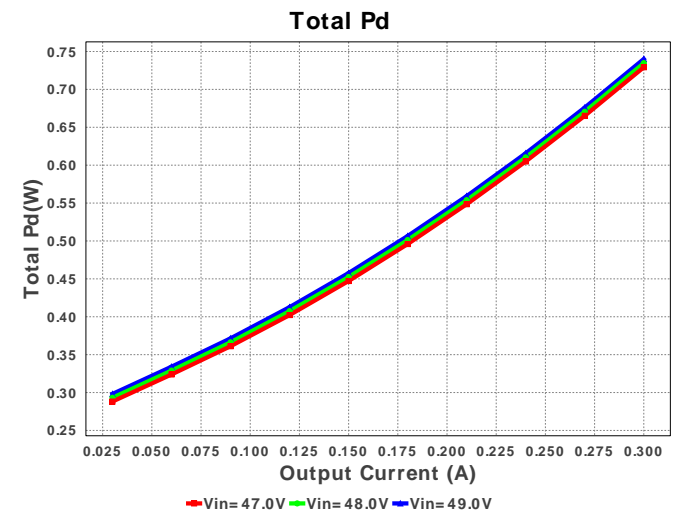
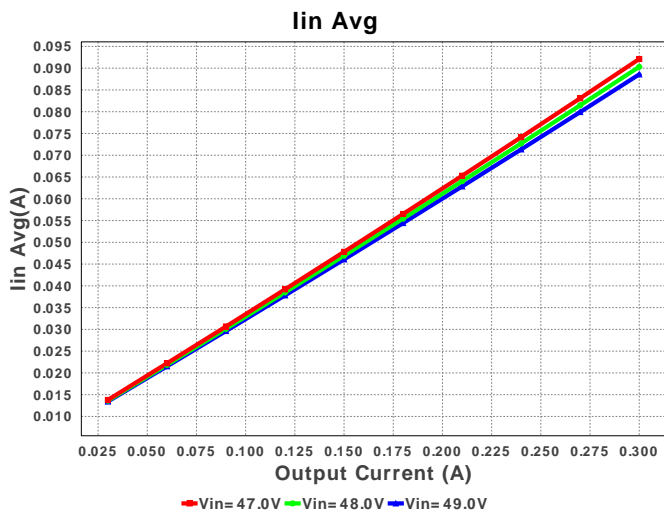
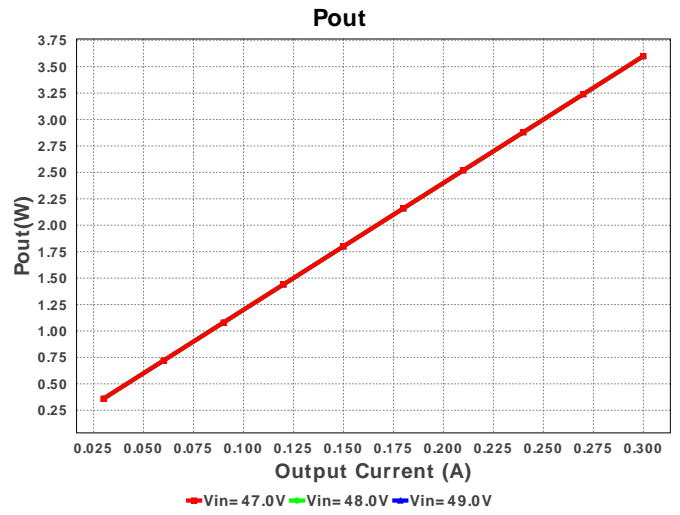
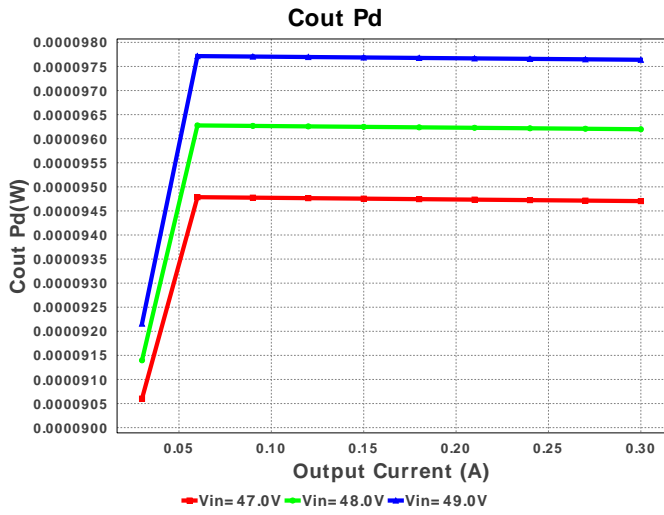
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
7.	U1	Texas Instruments	LM2574HVMX-ADJ/NOPB	Switcher	1	\$1.45	 NPA0014B 135 mm <sup>2</sup>

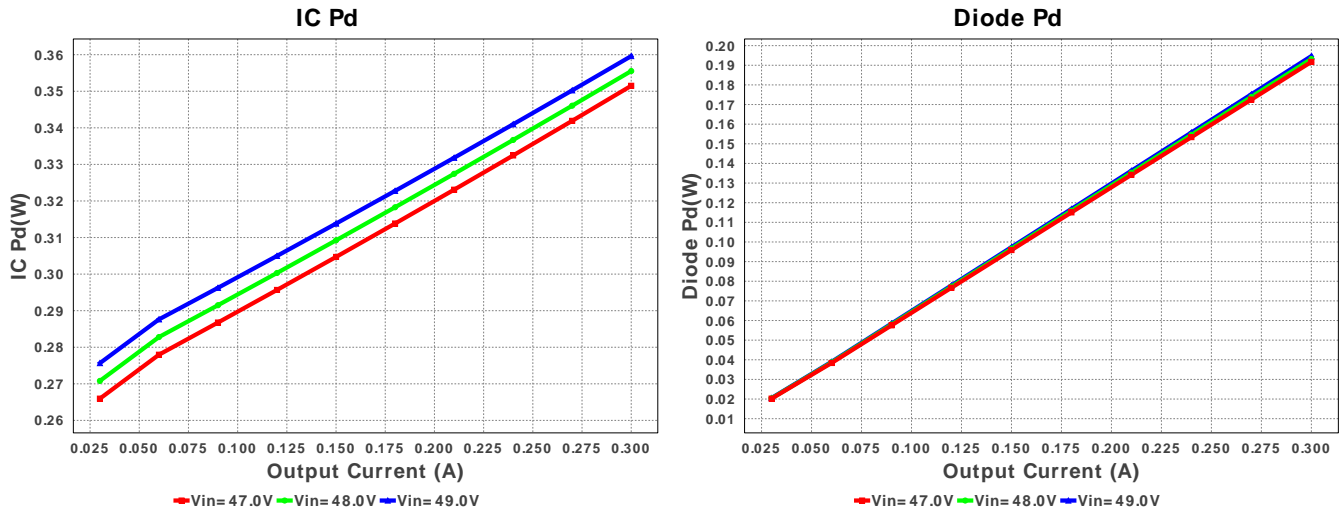


NPA0014B 135 mm<sup>2</sup>









## Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	132.018 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	23.966 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	341.509 mA	Current	Peak switch current in IC
4.	Iin Avg	88.574 mA	Current	Average input current
5.	L Ipp	83.019 mA	Current	Peak-to-peak inductor ripple current
6.	BOM Count	7	General	Total Design BOM count
7.	FootPrint	780.0 mm <sup>2</sup>	General	Total Foot Print Area of BOM components
8.	Frequency	52.0 kHz	General	Switching frequency
9.	IC Tolerance	13.0 mV	General	IC Feedback Tolerance
10.	Mode	CCM	General	Conduction Mode
11.	Pout	3.6 W	General	Total output power
12.	Total BOM	\$3.22	General	Total BOM Cost
13.	D1 Tj	41.68 degC	Op_Point	D1 junction temperature
14.	Vout Actual	11.882 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
15.	Vout OP	12.0 V	Op_Point	Operational Output Voltage
16.	Duty Cycle	26.263 %	Op_point	Duty cycle
17.	Efficiency	82.947 %	Op_point	Steady state efficiency
18.	IC Tj	42.586 degC	Op_point	IC junction temperature
19.	ICThetaJA	35.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
20.	IOUT_OP	300.0 mA	Op_point	Iout operating point
21.	VIN_OP	49.0 V	Op_point	Vin operating point
22.	Vout p-p	14.113 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	5.577 mW	Power	Input capacitor power dissipation
24.	Cout Pd	97.639 μW	Power	Output capacitor power dissipation
25.	Diode Pd	194.667 mW	Power	Diode power dissipation
26.	IC Pd	359.614 mW	Power	IC power dissipation
27.	L Pd	180.18 mW	Power	Inductor power dissipation
28.	Total Pd	740.122 mW	Power	Total Power Dissipation
29.	Vout Tolerance	2.887 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

## Design Inputs

#	Name	Value	Description
1.	Iout	300.0 m	Maximum Output Current
2.	VinMax	49.0	Maximum input voltage
3.	VinMin	47.0	Minimum input voltage
4.	Vout	12.0	Output Voltage
5.	base_pn	LM2574HV	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

## Design Assistance

1. **LM2574HV** Product Folder : <http://www.ti.com/product/LM2574HV> : contains the data sheet and other resources.

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